Search Report from Ginger R. DeMille

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         (c)2004 Info.Sources Inc
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         (c) 2004 The New York Times
File 475:Wall Street Journal Abs 1973-2004/Sep 24
         (c) 2004 The New York Times
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group

Set     Items   Description
S1      17726   CONTROLL?R?(S)(POLICY OR RULE? ? OR REGULATION? ? OR AGREE-
             MENT? ? OR CONTRACT? ?)
S2     378879   CONTROLL?R?(S)(LOCK? ? OR CONTROL? ? OR SAFEGUARD? ? OR SA-
             FE()GUARD? ? OR SECURE? OR SECURING OR SECURITY OR ACCESS?)
S3      10600   S2(S)(POLICY OR POLICIES OR RULE? ? OR REGULATION? ? OR AG-
             REEMENT? ? OR CONTRACT? ?)
S4       1841   S3(S)(HIERARCH? OR TIER? OR PRIORITY OR PRIORITI? OR SEQUE-
             NTIAL? OR SEQUENC? OR HEIRARCH? OR TOP()DOWN OR ORDER? OR ARR-
             ANG?)
S5        174   S4(S)(POLICY OR POLICIES)
S6        174   S5 NOT 350,344,347,371
S7        113   S6 NOT PY>1999
S8        105   RD (unique items)
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read (S8)

? t8/3,k/all

8/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012496119 **Image available**
WPI Acc No: 1999-302227/199925
XRPX Acc No: N99-226450
Data transfer controller for computer bus system
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: ARIMILLI R K; WILLIAMS D E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5901299	A	19990504	US 97934413	A	19970919	199925	B

Priority Applications (No Type Date): US 97934413 A 19970919
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5901299	A		33	G06F-009/30	

Abstract (Basic):
... 96) store and execute data transfer between external bus and partially inner bus. Inner logic **control** units (114A,114B) and main **controller** (115) regulates execution of stored operation according to **ordering policy** .

8/3,K/2 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6853465 INSPEC Abstract Number: C2001-04-3390T-018
Title: Time delay analysis in teleoperation system
Author(s): Sokho Chang; Jungtae Kim; Insup Kim; Jin Hwan Borm; Chongwon Lee; Jong Oh Park
Author Affiliation: Korea Inst. of Sci. & Technol., Seoul, South Korea
Conference Title: 8th IEEE International Workshop on Robot and Human Interaction. RO-MAN '99 (Cat. No.99TH8483) p.86-91
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 1999 Country of Publication: USA xxix+430 pp.
ISBN: 0 7803 5841 4 Material Identity Number: XX-2001-00005
U.S. Copyright Clearance Center Code: 0 7803 5841 4/99/$10.00
Conference Title: 8th IEEE International Workshop on Robot and Human Interaction. RO-MAN '99
Conference Sponsor: Scuola Superiore S.Anna; Robotics Soc. Japan; IEEE Ind. Electron. Soc.; IEEE Robotics & Autom. Soc.; Soc. Instrum. & Control Eng.; New Technol. Found
Conference Date: 27-29 Sept. 1999 Conference Location: Pisa, Italy
Language: English
Subfile: C

Abstract: We classify the data class according to their characteristics and endow with corresponding **priority** . To reduce time delay in teleoperation system, a dynamic scheduling **policy** is adopted. The dynamic scheduling **policy** processes high **priority** classes first, and then services low **priority** classes. The classes having low **priority** can be served in later sampling interval. It is important to maintain sampling

interval to be consistent for stable operation of robot **controller** . In this paper, we analyze data traffic in teleoperation system and suggest the algorithm to **control** it. Through real experiment, we show the validity of this **policy** .

8/3,K/3 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

6513672 INSPEC Abstract Number: C2000-04-1340K-017
Title: Stochastic real-valued reinforcement learning to solve a nonlinear control problem
Author(s): Kimura, H.; Kobayashi, S.
Author Affiliation: Dept. of Comput. Intelligence & Syst. Sci., Tokyo Inst. of Technol., Japan
Conference Title: IEEE SMC'99 Conference Proceedings. 1999 IEEE International Conference on Systems, Man, and Cybernetics (Cat. No.99CH37028) Part vol.5 p.510-15 vol.5
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 1999 Country of Publication: USA 6 vol. (1179+1075+1106+1124+1140+1078) pp.
ISBN: 0 7803 5731 0 Material Identity Number: XX-1999-03292
U.S. Copyright Clearance Center Code: 0 7803 5731 0/99/$10.00
Conference Title: IEEE SMC'99 Conference Proceedings. 1999 IEEE International Conference on Systems, Man, and Cybernetics
Conference Sponsor: IEEE Syst., Man, & Cybernetics Soc. (SMC); Sci. Council of Japan (SCJ); Soc. Instrum. & Control Eng. (SICE); Robotics Soc. Japan (RSJ); Japan Soc. Mech. Eng. (JSME)
Conference Date: 12-15 Oct. 1999 Conference Location: Tokyo, Japan
Language: English
Subfile: C

Abstract: This paper presents a new approach to reinforcement learning (RL) to solve a nonlinear **control** problem efficiently in which state and action spaces are continuous. We provide a **hierarchical** RL algorithm composed of local linear **controllers** and TD-learning, which are both very simple. The continuous state space is discretized into an array of coarse boxes, and each box has its own local linear **controller** for choosing primitive continuous actions. The higher-level of the **hierarchy** accumulates state-values using tables with one entry for each box. Each linear **controller** improves the local **control policy** by using an actor-critic method. The algorithm was applied to a simulation of a...

8/3,K/4 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

6463081 INSPEC Abstract Number: B2000-02-8110C-088, C2000-02-7410B-110
Title: Direct load control using a programmable logic controller
Author(s): El-Amin, I.M.; Al-Ali, A.R.; Suhail, M.A.
Author Affiliation: King Fahd Univ. of Pet. & Miner., Dhahran, Saudi Arabia
Journal: Electric Power Systems Research vol.52, no.3 p.211-16
Publisher: Elsevier,
Publication Date: 1 Dec. 1999 Country of Publication: Switzerland

CODEN: EPSRDN ISSN: 0378-7796
SICI: 0378-7796(19991201)52:3L.211:DLCU;1-S
Material Identity Number: E264-1999-013
U.S. Copyright Clearance Center Code: 0378-7796/99/$20.00
Language: English
Subfile: B C

Abstract: This paper presents a fully automated programmable logic **controller** (PLC) based direct load **control** system. Unlike other existing systems, it gives the consumer the privilege to share in the load shedding **policy** . After receiving the warning alarm from the PC at the utility **control** center, the consumer has the chance to switch off any desired load. If he does...

...action based on the scenario decided by the utility. Having the consumer decide his own **priorities** release the utility company from blind decisions. This is one of the most important contributions...

8/3,K/5 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

6461477 INSPEC Abstract Number: C2000-02-3390M-048
Title: Learning to grasp by using visual information
Author(s): Anglani, A.; Taurisano, F.; de Giuseppe, R.; Distante, C.
Author Affiliation: Dipt. di Ingegneria dell'Innovazione, Leece Univ., Italy
Conference Title: Proceedings 1999 IEEE International Symposium on Computational Intelligence in Robotics and Automation. CIRA'99 (Cat. No.99EX375) p.7-14
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 1999 Country of Publication: USA xv+364 pp.
ISBN: 0 7803 5806 6 Material Identity Number: XX-1999-03432
U.S. Copyright Clearance Center Code: 0 7803 5806 6/99/$10.00
Conference Title: Proceedings 1999 IEEE International Symposium on Computational Intelligence in Robotics and Automation CIRA'99
Conference Sponsor: IEEE Robotics & Autom. Soc
Conference Date: 8-9 Nov. 1999 Conference Location: Monterey, CA, USA
Language: English
Subfile: C

Abstract: This paper presents a solution to the problem of manipulation **control** : target identification and grasping. The proposed **controller** is designed for a real platform in combination with a monocular vision system. The objective of the **controller** is to learn an optimal **policy** to reach and to grasp a spherical object of known size, randomly placed in the environment. In **order** to accomplish this, the task has been treated as a reinforcement problem, in which the **controller** learns by a trial and error approach the situation-action mapping. The optimal **policy** is found by using the Q-learning algorithm, a model free reinforcement learning technique, that...

... on the industrial robot manipulator PUMA 560. Experimental results demonstrate the effectiveness of the adaptive **controller** that does not require an explicit global target position using direct perception of the

environment.

8/3,K/6 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

6459913 INSPEC Abstract Number: C2000-02-1340K-052
Title: Efficient non-linear control by combining Q-learning with local linear controllers
Author(s): Kimura, H.; Kobayashi, H.
Author Affiliation: Tokyo Inst. of Technol., Japan
Conference Title: Machine Learning. Proceedings of the Sixteenth International Conference (ICML'99) p.210-19
Editor(s): Bratko, I.; Dzeroski, S.
Publisher: Morgan Kaufmann, San Francisco, CA, USA
Publication Date: 1999 Country of Publication: USA xii+525 pp.
ISBN: 1 55860 612 2 Material Identity Number: XX-1999-01726
Conference Title: Proceedings of ICML-99: Sixteenth International Conference on Machine Learning
Conference Date: 27-30 June 1999 Conference Location: Bled, Slovenia
Language: English
Subfile: C

Abstract: Presents a new approach to reinforcement learning (RL) to solve a non-linear **control** problem efficiently in which state and action spaces are continuous. In real-world applications, an approach combining discrete RL methods with linear **controllers** is promising since there are many non-linear **control** problems that can be decomposed into several local linear **control** tasks. We provide a **hierarchical** RL algorithm composed of local linear **controllers** and Q-learning, which are both very simple. The continuous state-action space is discretized into an array of coarse boxes, and each box has its own local linear **controller** as an abstract action. The higher level of the **hierarchy** is a conventional discrete RL algorithm that chooses the abstract actions. Each linear **controller** improves the local **control** **policy** by using an actor-critic method. The coarse state-space discretization is a quite simple...

... dimensionality, but often gives rise to non-Markovian effects. In our approach, the local linear **controllers** make up for these undesirable effects. The algorithm was applied to a simulation of a...

8/3,K/7 (Item 6 from file: 2)
DIALOG(R)File 2:INSPEC

6459621 INSPEC Abstract Number: C2000-02-3350-025
Title: Multi-scale aspects in model-predictive control
Author(s): Stephanopoulos, G.; Karsligil, O.; Dyer, M.
Author Affiliation: Dept. of Chem. Eng., MIT, Cambridge, MA, USA

Conference Title: IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-5) Part vol.1 p.53-9 vol.1
Editor(s): Georgakis, C.
Publisher: Elseiver Sciece, Kidlington, UK
Publication Date: 1999 Country of Publication: UK 2 vol. xiv+746 pp.

ISBN: 0 08 043230 1 Material Identity Number: XX-1999-01013
Conference Title: Proceedings of 5th IFAC Symposium. Dynamics and Control of Process Systems 1998 (2 Volume Set)
Conference Sponsor: IFAC
Conference Date: 8-10 June 1998 Conference Location: Corfu, Greece
Language: English
Subfile: C

...Abstract: models defined in the time- or frequency-domain. They are defined on dyadic or higher- **order** trees, whose nodes are used to index the values of any variable, localised in both...
...and scale (range of frequencies). This dual localisation is particularly attractive in solving estimation and **control** problems. In the paper, multi-scale models are used to design model-predictive **controllers** , resulting in design techniques with several important advantages, such as: (a) natural depiction of performance characteristics and treatment of output constraints, (b) fast algorithms for establishing the constrained **control policies** over long prediction/ **control** horizons, (c) rich depiction of feedback errors at several scales, and (d) optimal fusion of multi-rate measurements and **control** actions.

8/3,K/8 (Item 7 from file: 2)
DIALOG(R)File 2:INSPEC

6441456 INSPEC Abstract Number: C2000-01-6160B-019
Title: Specification of MLS transaction processing by strongly compatible I/O automata
Author(s): Stach, J.; Park, E.K.; Song, I.Y.; Yoon, S.C.
Author Affiliation: Comput. Sci. Telecommun. Program, Missouri Univ., Kansas City, MO, USA
Conference Title: Joint Conference on Intelligent Systems 1999 (JCIS'98) Part vol.3 p.335-40 vol.3
Publisher: Assoc. for Intell. Machinery, USA
Publication Date: 1998 Country of Publication: USA 4 vol. 1921 pp.
ISBN: 0 9643456 7 6 Material Identity Number: XX-1999-02892
Conference Title: Proceedings of 6th International Conference on Fuzzy Theory and Technology
Conference Sponsor: Assoc. for Intell. Machinery; Machine Intell. & Fuzzy Logic Lab.; Elsevier Publishing Co.; Inf. Sci. Journal; US Army Res. Office ; Lab. for Intell. & Nonlinear Control; Duke Univ
Conference Date: 23-28 Oct. 1998 Conference Location: Research Triangle Park, NC, USA
Language: English
Subfile: C

Abstract: In an MLS database, each data item is labeled with a **security** classification and information is not allowed to flow from a higher level to a lower level or to an incompatible level. While the MAC **policy** prevents direct illegal information flows, traditional transaction scheduling algorithms may introduce indirect illegal information flows...

... serializable and non-interfering. The notions of external action signatures, local actions, steps and execution **sequences** associated with I/O automata facilitate specification of concurrent processes with these properties. The internal actions of I/O automata, coupled with their output

actions, can model local **control** of multiple **accesses** at each **security** level. This paper presents a basic transaction processing model composed of interface, scheduler, transaction and data automata with the desired properties for MLS database **security** . The basic model is extended to include a global **controller** , the action signatures of the automata are enriched to accommodate multi-level **access** , and internal actions are specified in support of environmental binding and version **control** . An example and proof sketch for validation of the multi-level model is provided.

8/3,K/9 (Item 8 from file: 2)
DIALOG(R)File 2:INSPEC

6416294 INSPEC Abstract Number: B2000-01-6230-002, C2000-01-3370-003
Title: Neural network contention controller for non-blocking ATM fabric switches
Author(s): Garcia-Lopera, A.; Valencia, G.; Sanchez, D.; Ruiz, M.; Sandoval, F.
Author Affiliation: Dpto. de Tecnologia Electron., Malaga Univ., Spain
Conference Title: Engineering Benefits from Neural Networks. Proceedings of the International Conference EANN '98 p.395-8
Editor(s): Bulsari, A.B.; Fernandez de Canete, J.; Kallio, S.
Publisher: Syst. Eng. Assoc, Turku, Finland
Publication Date: 1998 Country of Publication: Finland v+408 pp.
ISBN: 951 97868 0 5 Material Identity Number: XX-1999-02837
Conference Title: Engineering Benefits from Neural Networks. Proceedings of the International Conference EANN'98
Conference Sponsor: AB Nonlinear Solutions OY; Syst. Eng. Assoc.; Univ. Malaga
Conference Date: 10-12 June 1998 Conference Location: Gibraltar
Language: English
Subfile: B C

...Abstract: non-blocking switches used in the implementation of asynchronous transfer mode (ATM) switch fabrics. The **control policy** of the input buffers of the switch is a key issue to solve the input and output contention problem and improve its throughput. Among the different buffer **control policies** proposed to improve the throughput, the bypass queueing or window-based cell scheduling **controller** has been reported in the literature as able to get throughput near unity. Our scheduler is based on currently made double overlapping winner take all circuits (DOWTA). This neural **controller** chooses from the input buffers the maximum number of cells able to be routed to...

... Through H-SPICE simulation we check the response time of several configurations, being of the **order** of a few nanoseconds for the worst case. Other circuits reported in the literature have response time in the **order** of near microseconds. The discrimination voltage level between winner and loser neurons is higher than...

8/3,K/10 (Item 9 from file: 2)
DIALOG(R)File 2:INSPEC

6382381 INSPEC Abstract Number: C1999-11-1340K-079

Title: Error bounds in nonlinear control design via approximate policy iteration
Author(s): Boussios, C.I.; Dahleh, M.A.; Tsitsiklis, J.N.
Author Affiliation: MIT, Cambridge, MA, USA
Conference Title: Proceedings of the 1999 American Control Conference (Cat. No. 99CH36251) Part vol.4 p.2837-41 vol.4
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 1999 Country of Publication: USA 6 vol. (lxxxviii+4571) pp.
ISBN: 0 7803 4990 3 Material Identity Number: XX-1999-02125
U.S. Copyright Clearance Center Code: 0 7803 4990 3/99/$10.00
Conference Title: Proceedings of the 1999 American Control Conference
Conference Sponsor: American Automatic Control Council; IFAC
Conference Date: 2-4 June 1999 Conference Location: San Diego, CA, USA
Language: English
Subfile: C

Abstract: We consider the optimal nonlinear **control** problem and evaluate a computational design procedure which produces suboptimal **controllers** (**policies**), an approximate **policy** iteration. The method uses an approximation of the cost (cost-to-go) function of a given closed loop system in **order** to produce an updated **controller** of (hopefully) improved performance. We develop bounds on the approximation error such that the resulting **controllers** are stabilizing and bounds on the approximation error such that the resulting **controllers** are of improved performance.

8/3,K/11 (Item 10 from file: 2)
DIALOG(R)File 2:INSPEC

6355381 INSPEC Abstract Number: C1999-10-1290F-137
Title: Order release and deadlock avoidance interactions in counter-flow system optimization
Author(s): Lawley, M.; Mittenthal, J.
Author Affiliation: Sch. of Ind. Eng., Purdue Univ., West Lafayette, IN, USA
Journal: International Journal of Production Research vol.37, no.13 p.3043-62
Publisher: Taylor & Francis,
Publication Date: 10 Sept. 1999 Country of Publication: UK
CODEN: IJPRB8 ISSN: 0020-7543
SICI: 0020-7543(19990910)37:13L.3043:ORDA;1-4
Material Identity Number: I286-1999-013
Language: English
Subfile: C

Abstract: Supervisory **controllers** for automated manufacturing systems must assure good system performance and guarantee deadlock-free operation. **Order** release mechanisms are performance **control policies** that **order** and schedule the release of work into the system, while deadlock avoidance **policies** are **control policies** that inhibit enabled events that might lead to deadlock. Because neither **policy** explicitly considers the objectives of the other, their decisions often conflict. To guarantee continuing system operation, these conflicts must be resolved in favour of

the deadlock avoidance **policy** , and as a result, the intended beneficial effects of the **order** release mechanism can be significantly undermined. The goals of the paper are: (i) to demonstrate how deadlock avoidance and **order** release can be integrated to form a **control policy** that ensures continued system operation and improved performance with regard to performance measures; and (ii) to experimentally investigate the important interactions that can arise between these two types of **control** .

8/3,K/12 (Item 11 from file: 2)
DIALOG(R)File 2:INSPEC

6355244 INSPEC Abstract Number: C1999-10-1340B-012
Title: H/sup infinity / control of large-scale jump linear systems via averaging and aggregation
Author(s): Zigang Pan; Basar, T.
Author Affiliation: Dept. of Electr. Eng., Polytech. Univ., Brooklyn, NY, USA
Journal: International Journal of Control vol.72, no.10 p.866-81
Publisher: Taylor & Francis,
Publication Date: 10 July 1999 Country of Publication: UK
CODEN: IJCOAZ ISSN: 0020-7179
SICI: 0020-7179(19990710)72:10L.866:CLSJ;1-R
Material Identity Number: I098-1999-009
Language: English
Subfile: C

Abstract: This paper studies, under state feedback **policies** , the H/sup infinity / **control** design for large-scale jump linear systems where the form process admits strong and weak...

... cases and using averaging and aggregation techniques, an aggregate jump linear system of considerably smaller **order** has been obtained, along with a corresponding (compatible) cost function. This reduced- **order** (aggregate) problem is another piecewise-deterministic H/sup infinity / **control** problem, and, on the basis of the solution of this problem, we obtain the asymptotic limit of the optimal performance level for the full- **order** system, as well as an approximate **controller** that can asymptotically achieve any desired performance level for the full- **order** system. A by-product of this analysis is a similar decomposition for the piecewise-deterministic...

8/3,K/13 (Item 12 from file: 2)
DIALOG(R)File 2:INSPEC

6324870 INSPEC Abstract Number: B1999-09-8520B-017, C1999-09-3360B-024
Title: A comparison of fixed-priority and static cyclic scheduling for distributed automotive control applications
Author(s): Lonn, H.; Axelsson, J.
Author Affiliation: Chalmers Univ. of Technol., Goteborg, Sweden
Conference Title: Proceedings of 11th Euromicro Conference on Real-Time Systems. Euromicro RTS'99 p.142-9
Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA
Publication Date: 1999 Country of Publication: USA xii+297 pp.

ISBN: 0 7695 0240 7 Material Identity Number: XX-1999-00175
U.S. Copyright Clearance Center Code: 1060-3070/99/$10.00
Conference Title: Proceedings of 11th Euromicro Workshop on Real-Time Systems
Conference Date: 9-11 June 1999 Conference Location: York, UK
Language: English
Subfile: B C

Abstract: This paper compares different scheduling **policies** applied to distributed systems intended for automotive real-time **control** applications. We describe the characteristics of systems using fixed **priority** (FP) and static cyclic (SC) scheduling of processors and bus communication, with combinations ranging from FP bus-FP processors to SC bus-SC processors. FP bus is represented by the **Controller** Area Network protocol (CAN) and SC bus by a Time Division Multiple **Access** (TDMA) protocol. We also study the effects of using a global time base. Our main concern is **control** performance, including input and output jitter and **control** delay and therefore the response time of a **sequence** of **control** tasks and the related communication. For each system configuration we analyze the expected response times of a series of **control** related tasks (delay) and the temporal variation of the input and output instants (jitter).

8/3,K/14 (Item 13 from file: 2)
DIALOG(R)File 2:INSPEC

6315568 INSPEC Abstract Number: C1999-09-3355-004
Title: Simulation study using Taguchi methods: an effective tool for control of computer integrated manufacturing and logistics systems
Author(s): Wadhwa, S.; Bhagwat, R.
Author Affiliation: Dept. of Mech. Eng., Indian Inst. of Technol., New Delhi, India
Journal: Studies in Informatics and Control vol.8, no.2 p.121-30
Publisher: Informatics & Control Publications,
Publication Date: June 1999 Country of Publication: Romania
CODEN: SICOF7 ISSN: 1220-1766
SICI: 1220-1766(199906)8:2L.121:SSUT;1-1
Material Identity Number: D226-1999-002
Language: English
Subfile: C

...Abstract: ultimate aim is to develop a decision and information system that provides real-time online **control** . A good example is the **control** of FMS (a mini-CIM). Such capabilities are very expensive and industry is more interested...
...computerized flexible manufacturing (SCFM) systems are a useful building block for the purpose. Online SCFM **control** involves decision and information delays where decisions are based on nonreal-time information. To effectively **control** SCFM systems with defined levels of flexibility, it is essential to explicitly model and analyze the effect of decision and information delays on the performance of an online **control** strategy. Computer simulation is an expedient approach, but it may be expensive in time, effort...

... system. This may result in a very large number of possible combinations to simulate in **order** to identify optimal **control** directions. The **controllers** ideally require tools and methodologies that help them to quickly and effectively identify the **priority** factors and the impact of their interactions. In this paper we present one such approach to study the makespan performance of an SCFM system under a review period monitoring **policy** that entails variable information delays.

8/3,K/15 (Item 14 from file: 2)
DIALOG(R)File 2:INSPEC

6272375 INSPEC Abstract Number: C1999-07-3360L-025
Title: Line-of-sight pointing stability for "drifting" satellites
Author(s): Kumar, K.; Kumar, K.D.
Author Affiliation: Dept. of Aerosp. Eng., Indian Inst. of Technol., Kanpur, India
Journal: IEEE Transactions on Aerospace and Electronic Systems vol.35, no.2 p.504-10
Publisher: IEEE,
Publication Date: April 1999 Country of Publication: USA
CODEN: IEARAX ISSN: 0018-9251
SICI: 0018-9251(199904)35:2L.504:LSPS;1-D
Material Identity Number: I088-1999-002
U.S. Copyright Clearance Center Code: 0018-9251/99/$10.00
Language: English
Subfile: C

Abstract: Explored here is the feasibility of a new attitude **control** approach for satellites in high altitude elliptic orbits, in **order** to compensate for the effect of longitudinal periodic drift relative to the ground station. A simple attitude **control** technique using tethers has been proposed for achieving the fixed apparent satellite orientation with respect to the ground segment of the space mission. Combining the proposed feedback tether length **control** law with the analytically developed open-loop **control** **policy** results in a significant improvement of the **controller** performance. To illustrate implementation of the proposed concept, the particular case of 24 h elliptic...

8/3,K/16 (Item 15 from file: 2)
DIALOG(R)File 2:INSPEC

6251341 INSPEC Abstract Number: B1999-06-7930-017
Title: Connection precedence and preemption in military asynchronous transfer mode (ATM) networks
Author(s): Poretsky, S.
Conference Title: IEEE Military Communications Conference. Proceedings. MILCOM 98 (Cat. No.98CH36201) Part vol.1 p.86-90 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1998 Country of Publication: USA 3 vol. xxxv+1083 pp.
ISBN: 0 7803 4506 1 Material Identity Number: XX-1998-03076
U.S. Copyright Clearance Center Code: 0 7803 4506 1/98/$10.00
Conference Title: IEEE Military Communications Conference. Proceedings.

MILCOM 98
Conference Date: 18-21 Oct. 1998 Conference Location: Boston, MA, USA
Language: English
Subfile: B

Abstract: While currently employed asynchronous transfer mode (ATM) **prioritization** schemes grant precedence to cells in the network, high precedence connections may be locked out...
... when the requested resources are unavailable. No modification is required to the selected connection admission **control** algorithm and the network manager may configure precedence assignment and preemption **policies** for network-specific optimization. The algorithm is ideal for ATM networks with a central **controller** , such as a wireless-ATM network or ATM-over-DAMA satellite network, because it uses modified ATM Forum standard signaling to leverage the central **controller** 's knowledge of the network. In addition, solutions are presented for backward compatibility, **security** , and preempted connection restoration.

8/3,K/17 (Item 16 from file: 2)
DIALOG(R)File 2:INSPEC

6128293 INSPEC Abstract Number: B1999-02-8520-035, C1999-02-3360D-006
Title: A new approach to the levitation control of an electromagnetic suspension vehicle
Author(s): Bittar, A.; da Cruz, J.J.; Sales, R.M.
Author Affiliation: Dept. of Electron. Eng., Sao Paulo Univ., Brazil
Conference Title: Proceedings of the 1998 IEEE International Conference on Control Applications (Cat. No.98CH36104) Part vol.1 p.263-7 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1998 Country of Publication: USA 2 vol. (xxix+vii+1423) pp.
ISBN: 0 7803 4104 X Material Identity Number: XX-1998-02075
U.S. Copyright Clearance Center Code: 0 7803 4104 X/98/$10.00
Conference Title: Proceedings of 1998 International Conference on Control Applications
Conference Sponsor: IEEE; CSS; AEI (Italian Electr. & Electron. Assoc.); ANIPLA (Italian Assoc. Autom.); ASME Dynamic Syst. & Control Div.; Eur. Union Control Assoc.; IEEE North Italy Sect.; IEEE Robotics & Autom. Soc.; IFAC
Conference Date: 1-4 Sept. 1998 Conference Location: Trieste, Italy
Language: English
Subfile: B C

Abstract: A new approach to the levitation **control** of an electromagnetic suspension vehicle prototype is proposed. The prototype has four electromagnetic actuators of...

... all located at the corners of the prototype. The vehicle levitation is performed through the **control** of heave, roll and pitch. A three degree of freedom rigid body model is developed. A situation where the number of actuators is larger than the number of **control** variables is thus characterized. A command **policy** of actuators generates an optimal distribution of forces by the actuators in **order** to produce the force and moments required by the heave, roll and pitch **controllers** . A measurement

processing is done on the signals of the gap sensors to generate estimates of heave, roll and pitch. To stabilize the closed-loop system, a **controller** with a lead-lag phase characteristic is implemented. The obtained experimental results show that the...

8/3,K/18 (Item 17 from file: 2)
DIALOG(R)File 2:INSPEC

6114597 INSPEC Abstract Number: B9902-6220B-001, C9902-5620W-004
Title: A hierarchical HFC network with QoS guaranteed traffic policy
Author(s): Nen-Fu Huang; Chuan-Pwu Wang; Chi-An Su
Author Affiliation: Dept. of Comput. Sci., Nat. Tsing Hua Univ., Hsinchu, Taiwan
Journal: IEEE Transactions on Broadcasting vol.44, no.4 p.517-26
Publisher: IEEE,
Publication Date: Dec. 1998 Country of Publication: USA
CODEN: IETBAC ISSN: 0018-9316
SICI: 0018-9316(199812)44:4L.517:HNWG;1-L
Material Identity Number: I033-98004
U.S. Copyright Clearance Center Code: 0018-9316/98/$10.00
Language: English
Subfile: B C

...Abstract: services closer to the users. For people at home, two typical networks are available to **access** the Internet: telephone network and CATV network. This paper presents a **hierarchical** tree-based structure for the hybrid fiber-cable (HFC) network where the traditional HFC network is partitioned into segments. Each segment is coordinated by a central traffic **controller** (CTC). A reservation-based traffic **policy** is also proposed for the CTC to schedule the data transmissions within the segment to...

...reused efficiently and the system performance is improved significantly. Simulation results indicate that the proposed **hierarchical** HFC network performs much better than the traditional HFC network in terms of delay, delay jitter and channel utilization. Through the proposed traffic **policy**, the **hierarchical** HFC network also offers guaranteed QoS for the users.

8/3,K/19 (Item 18 from file: 2)
DIALOG(R)File 2:INSPEC

6100555 INSPEC Abstract Number: C9901-7480-055
Title: Deadlock prevention and avoidance in FMS: a Petri net based approach
Author(s): Abdallah, I.B.; ElMaraghy, H.A.
Author Affiliation: IMS Centre, Windsor Univ., Ont., Canada
Journal: International Journal of Advanced Manufacturing Technology vol.14, no.10 p.704-15
Publisher: Springer-Verlag,
Publication Date: 1998 Country of Publication: UK
CODEN: IJATEA ISSN: 0268-3768
SICI: 0268-3768(1998)14:10L.704:DPAP;1-P
Material Identity Number: J700-98010

U.S. Copyright Clearance Center Code: 0268-3768/98/$2.00+0.20
Language: English
Subfile: C

...Abstract: S/sup 4/R nets is demonstrated. Major synchronisation patterns, such as generalised parallel and **sequential** mutual exclusion, frequently observed in FMS contexts can be represented by this class. The liveness...
... controlling minimal-siphons of a given S/sup 4/R net is developed where local **control** places are added to the net. A sufficient condition for liveness of the augmented net...

... constitutes a deadlock prevention approach. When the net liveness condition is not satisfied, an online **controller** , using a dynamic resource allocation **policy** , is developed for the augmented net. The performance of the proposed approaches is illustrated using...

8/3,K/20 (Item 19 from file: 2)
DIALOG(R)File 2:INSPEC

6096664 INSPEC Abstract Number: C9901-1340K-030
Title: An optimal control policy for nonlinear system
Author(s): Devi, A.; Choudhury, H.; Yokoyama, R.
Conference Title: 33rd Universities Power Engineering Conference. UPEC '98 Conference Proceedings Part vol.2 p.557-60 vol.2
Publisher: Napier Univ, Edinburgh, UK
Publication Date: 1998 Country of Publication: UK 3 vol. (xix+878+20) pp.
ISBN: 0 902703 50 1 Material Identity Number: XX98-02738
Conference Title: Proceedings of 1998 Universities Power Engineering Conference
Conference Date: 8-10 Sept. 1998 Conference Location: Edinburgh, UK
Language: English
Subfile: C

Abstract: This paper concerns the application of optimal **control** to a nonlinear dynamical system. The design of the **controller** is based on Pontrygin's principle. The dynamical system taken here is a second **order** model representing a prey-predator ecosystem. The form of optimal **control** is discovered to see the system behaviour. The cost of the process to **control** a prey-predator ecosystem is the combination of the cost caused by the prey population together with the cost of **control** . The prey-predator system is subjected to biological **control** and chemical **control** . The **control** **policy** is found to be of the `bang-bang' type which switches from null **control** to maximum **control** depending upon the switching function.

8/3,K/21 (Item 20 from file: 2)
DIALOG(R)File 2:INSPEC

6075547 INSPEC Abstract Number: C9812-1290F-055
Title: Use of game theoretic techniques for set up decisions in

distributed manufacturing systems
Author(s): McDonnell, P.; Joshi, S.
Author Affiliation: AT&T Bell Labs., Norcross, GA, USA
Conference Title: First International Workshop on Intelligent Manufacturing Systems (IMS-Europe 1998). Proceedings p.467-78
Publisher: Ecole Polytech. Federale de Lausanne, Lausanne, Switzerland
Publication Date: 1998 Country of Publication: Switzerland 702 pp.
Material Identity Number: XX98-01554
Conference Title: Proceedings of First International Workshop on Intelligent Manufacturing Systems
Conference Date: 15-17 April 1998 Conference Location: Lausanne, Switzerland
Language: English
Subfile: C

Abstract: Heterarchical **control** systems have emerged as promising alternatives to conventional centralized and **hierarchical** shop floor **control** structures. However research to date has largely ignored long term **control** issues such as the timing of resource reconfigurations, issues vital for the avoidance of myopic decision making. As traditional analysis techniques implicitly assume centralized analysis and implementation of **policies** , they are not directly applicable to heterarchical environments. This paper describes a non-cooperative game theoretic planning technique for the autonomous analysis of reconfiguration decisions by heterarchical machine **controllers** . Under the proposed system, a machine **controller** evaluates a setup game to determine appropriate actions when faced with a reconfiguration decision. The...

... pure or mixed strategy equilibrium of the setup game. By evaluating a game, the machine **controller** accounts for the potential actions and reactions of other machine **controllers** in the system. The approach allows autonomous machine **controller** to make strategic decisions regarding future actions while preserving the independence characteristic of **controllers** in heterarchical environments.

8/3,K/22 (Item 21 from file: 2)
DIALOG(R)File 2:INSPEC

6045197 INSPEC Abstract Number: C9811-1290F-028
Title: A correct and scalable deadlock avoidance policy for flexible manufacturing systems
Author(s): Lawley, M.A.; Reveliotis, S.A.; Ferreira, P.M.
Author Affiliation: Sch. of Ind. Eng., Purdue Univ., West Lafayette, IN, USA
Journal: IEEE Transactions on Robotics and Automation vol.14, no.5 p.796-809
Publisher: IEEE,
Publication Date: Oct. 1998 Country of Publication: USA
CODEN: IRAUEZ ISSN: 1042-296X
SICI: 1042-296X(199810)14:5L.796:CSDA;1-A
Material Identity Number: M938-98006

U.S. Copyright Clearance Center Code: 1042-296X/98/$10.00
Language: English
Subfile: C

Abstract: Configuration flexibility and deadlock-free operation are two essential properties of **control** systems for highly automated flexible manufacturing systems. Configuration flexibility, the ability to quickly modify manufacturing system components and their logical relationships, requires automatic generation of **control** executables from high level system specifications. These **control** executables must guarantee deadlock-free operation. The resource **order** **policy** is a configurable **controller** that provides the deadlock-free guarantee for buffer space allocation. It uses a total **ordering** of system machines and routing information to generate a set of configuration specific linear constraints ...

8/3,K/23 (Item 22 from file: 2)
DIALOG(R)File 2:INSPEC

5927157 INSPEC Abstract Number: B9807-8570-001, C9807-3340B-003
Title: Application of fuzzy logic in home appliance: gas heater controller design
Author(s): Zhu Rongming; Tian Bian; Wang Qiantu; Dai Guaozhong
Author Affiliation: Dept. of Autom. Control, Northwestern Polytech. Univ., Xi'an, China
Conference Title: 1997 IEEE International Conference on Intelligent Processing Systems (Cat. No.97TH8335) Part vol.1 p.373-6 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1997 Country of Publication: USA 2 vol. xxviii+1893 pp.
ISBN: 0 7803 4253 4 Material Identity Number: XX98-00909
U.S. Copyright Clearance Center Code: 0 7803 4253 4/97/$10.00
Conference Title: 1997 IEEE International Conference on Intelligent Processing Systems
Conference Sponsor: IEEE Ind. Electron. Soc.; Tsinghua Univ., China; Northwestern Polytech. Univ., China; Int. Technol. & Econ. Inst., State Council of China; Chinese Assoc. Autom.; Nat. Natural Sci. Found. China; Japanese Soc. Instrum. & Control Eng.; Japan Soc. Fuzzy Theory & Syst.; Beijing Assoc. Sci. & Technol. Exchange with Foreign Countries; IEEE Control Soc. Beijing Chapter
Conference Date: 28-31 Oct. 1997 Conference Location: Beijing, China
Language: English
Subfile: B C

...Abstract: one that manufacturers are striving to increase their shares in it. Customers are giving high **priority** to those products with reasonably low price, outstanding quality and versatile functionality. Microcontrollers (MCUs) introduced...

... appliance design give advantages of low cost and highly flexible products, and the focus in **control** **policy** design has shifted to acquire a something better one than the rigid PID **controller** in **order** to get the most out of the MCU. This paper gives an example of applying fuzzy logic mixed with a PID **control** **policy** for an innovative fast gas heater design, demonstrating the general procedures of system analysis and **control** **policy** determination. The result proves that such a design provides a good solution to meet customers...

8/3,K/24 (Item 23 from file: 2)
DIALOG(R)File 2:INSPEC

5890757 INSPEC Abstract Number: B9805-6150C-074
Title: Adaptive flow control scheme for real-time traffic in ATM networks
Author(s): Wen-Yen Fu; Latchman, H.A.; Shang-Yi Lu
Author Affiliation: Dept. of Electr. & Comput. Eng., Florida Univ., FL, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3231 p.271-82
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 1997 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(1997)3231L.271:AFCS;1-1
Material Identity Number: C574-97296
U.S. Copyright Clearance Center Code: 0277-786X/97/$10.00
Conference Title: Performance and Control of Network Systems
Conference Sponsor: SPIE
Conference Date: 3-5 Nov. 1997 Conference Location: Dallas, TX, USA
Language: English
Subfile: B

...Abstract: over shorter time scales than those at which end-to-end protocols such as congestion **control** schemes typically operate. In such cases, the congestion can dissipate rapidly before congestion feedback information...

... cell loss rate low and network utilization high, we propose an adaptive rate-based flow **control** scheme for real-time VBR traffic in ATM networks. The goal of the scheme is to minimize the impact of traffic overload in **order** to limit the cell loss rate to an acceptable range and also increase the network utilization. The proposed flow **control** scheme is based on predicting the evolution of buffer occupancy over time using a proportional-plus-integral-plus-derivative **controller** and a linear predictor to adaptively update the optimum data emission rate at the transmitter. The adaptive **policy** attempts to keep the buffer occupancy for each virtual channel at a steady level and...

...proposed scheme works effectively against network congestion. Along with the design of the new flow **control** scheme, we also develop a **hierarchically** structured testbed to measure network performance and explore various flow **control** schemes in ATM networks with diverse classes of incoming traffic.

8/3,K/25 (Item 24 from file: 2)
DIALOG(R)File 2:INSPEC

5878865 INSPEC Abstract Number: C9805-3355-012
Title: A two-phase approach for design of supervisory controllers for robot cells: model checking and Markov decision models
Author(s): Tae-Eog Lee; Jin-Hwan Lee
Author Affiliation: Dept. of Ind. Eng., Korea Adv. Inst. of Sci. &

Technol., Seoul, South Korea
Journal: Annals of Operations Research vol.77 p.157-82
Publisher: Baltzer,
Publication Date: 1998 Country of Publication: Netherlands
CODEN: AOREEV ISSN: 0254-5330
SICI: 0254-5330(1998)77L.157:PADS;1-#
Material Identity Number: D430-98003
Language: English
Subfile: C

Abstract: The supervisory **controller** for a robot cell is specified as a dynamic **control policy** that determines the part processing **sequence** and the robot work cycle depending on the state of the cell. The supervisory **controller** should be designed not only to satisfy the prescribed logical requirements or constraints, but also to achieve the maximum operating efficiency. We discuss modeling and **control** issues for robot task planning. We propose a two-phase approach to design the supervisory **controller** that consists of the logical design phase and the performance design phase. In the first...

... we use a model checking technique for concurrent automata to verify whether the proposed logical **control rules** satisfy the logical requirements. The logical **control** requirements may include deadlock prevention, obedience to the technological operation **sequence** of each part, or prevention of wasteful robot moves. In the second phase, we use semi-Markov decision models to determine additional **control** decisions for which the robot cell has the maximum throughput rate. We discuss the structure and algorithms of the performance **control** design problem.

8/3,K/26 (Item 25 from file: 2)
DIALOG(R)File 2:INSPEC

5870568 INSPEC Abstract Number: B9805-8110B-033, C9805-3340H-029
Title: Reduced H/sub infinity / load frequency controller in a deregulated electric power system environment
Author(s): Feliachi, A.
Author Affiliation: Dept. of Comput. Sci. & Electr. Eng., West Virginia Univ., Morgantown, WV, USA
Conference Title: Proceedings of the 36th IEEE Conference on Decision and Control (Cat. No.97CH36124) Part vol.4 p.3100-1 vol.4
Publisher: IEEE, New York, NY, USA
Publication Date: 1997 Country of Publication: USA 5 vol. 5067 pp.
ISBN: 0 7803 4187 2 Material Identity Number: XX98-00300
U.S. Copyright Clearance Center Code: 0 7803 4187 2/97/$10.00
Conference Title: Proceedings of the 36th IEEE Conference on Decision and Control
Conference Sponsor: IEEE Control Syst. Soc.; SIAM; Inst. Oper.Res. & Manage. Sci
Conference Date: 10-12 Dec. 1997 Conference Location: San Diego, CA, USA
Language: English
Subfile: B C

...Abstract: systems, which include separate generation, (GENCOs), transmission (TRANSCOs) and distribution (DISCOs) companies with an open

Author(s): El Adl, M.K.; Rodriguez, A.A.; Tsakalis, K.S.
Author Affiliation: Dept. of Electr. Eng., Arizona State Univ., Tempe, AZ, USA
Conference Title: Proceedings of the 35th IEEE Conference on Decision and Control (Cat. No.96CH35989) Part vol.2 p.1736-42 vol.2
Publisher: IEEE, New York, NY, USA
Publication Date: 1996 Country of Publication: USA 4 vol. 4858 pp.
ISBN: 0 7803 3590 2 Material Identity Number: XX97-00254
U.S. Copyright Clearance Center Code: 0 7803 3590 2/96/$5.00
Conference Title: Proceedings of 35th IEEE Conference on Decision and Control
Conference Sponsor: IEEE Control Syst. Soc.; Soc. Instrum. & Control Eng. ; Inst. Syst., Control & Inf. Eng
Conference Date: 11-13 Dec. 1996 Conference Location: Kobe, Japan
Language: English
Subfile: B C

Abstract: This paper addresses **hierarchical** modeling and **control** issues within a modern semiconductor fabrication facility. It is well known that fabs are appropriately...

... scales. These models provide synchronous discrete-time approximations which may be useful for analysis and **control** design. They also provide a natural tool for systematically addressing aggregation/de-aggregation issues. It...

... useful for making high-level long term decisions, determining realistic commands for low-level tracking **policies** , and for assessing achievable performance. A low-level tracking **policy** is presented and integrated with a high-level state variable feedback **policy** . The low-level tracking **policy** is shown to track low-frequency commands generated by the high-level **controller** .

8/3,K/32 (Item 31 from file: 2)
DIALOG(R)File 2:INSPEC

5513239 INSPEC Abstract Number: B9704-6210C-024, C9704-7410F-050
Title: Hybrid: unifying centralised and distributed network management using intelligent agents
Author(s): Somers, F.
Author Affiliation: Broadcom Eireann Res. Ltd., Dublin, Ireland
Conference Title: NOMS 96. 1996 IEEE Network Operations and Management Symposium (Cat. No.96CH35757) Part vol.1 p.34-43 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1996 Country of Publication: USA 4 vol. (xvii+754+56) pp.
ISBN: 0 7803 2518 4 Material Identity Number: XX96-00386
U.S. Copyright Clearance Center Code: 0 7803 2518 4/96/$5.00
Conference Title: Proceedings of NOMS '96 - IEEE Network Operations and Management Symposium
Conference Sponsor: IEEE Commun. Soc.; IFIP
Conference Date: 15-19 April 1996 Conference Location: Kyoto, Japan
Language: English
Subfile: B C

...Abstract: exacerbate this problem as they generate large amounts of

data and require more sophisticated traffic **control policies** than traditional circuit-switched networks. Recognition of the need to retain the benefits of centralised...

...benefits of centralised and distributed management. DAI promotes the use of behavioural rather than functional **control** . We argue that this is an important abstraction tool for constructing, maintaining and understanding large and complex systems. In particular, in **order** to improve network management scalability, we propose a **hierarchical** system of independent **controllers** (agents) with local problem-solving and decision-making capabilities. Each agent acts much like existing...

... of interest between themselves. The hybrid architecture has wide application potential for distributed management and **control** tasks, particularly interdomain network management, service management and manager of managers (MOM).

8/3,K/33 (Item 32 from file: 2)
DIALOG(R)File 2:INSPEC

5490835 INSPEC Abstract Number: C9703-1330-013
Title: Are bang-bang minimum-time control policies evolutionarily inevitable?
Author(s): Porter, B.
Author Affiliation: Dept. of Ind. & Manuf. Syst. Eng., Hong Kong Univ., Hong Kong
Conference Title: 1996 IEEE International Conference on Systems, Man and Cybernetics. Information Intelligence and Systems (Cat. No.96CH35929) Part vol.3 p.2422-7 vol.3
Publisher: IEEE, New York, NY, USA
Publication Date: 1996 Country of Publication: USA 4 vol. 3234 pp.
ISBN: 0 7803 3280 6 Material Identity Number: XX97-00013
U.S. Copyright Clearance Center Code: 0 7803 3280 6/96/$5.00
Conference Title: Proceedings of IEEE International Conference on Systems, Man and Cybernetics
Conference Sponsor: Tsinghua Univ
Conference Date: 14-17 Oct. 1996 Conference Location: Beijing, China
Language: English
Subfile: C

Abstract: The extent to which minimum-time **control policies** are necessarily bang-bang is investigated. It is shown that this very important issue can...

...genetic algorithms. These general results are illustrated by the genetic design of a minimum-time **controller** for a second- **order** plant. It transpires that the **control policies** generated by a two-level **hierarchy** of genetic algorithms evolve towards a bang-bang form as the performance of the associated **controller** evolves towards time-optimality.

8/3,K/34 (Item 33 from file: 2)
DIALOG(R)File 2:INSPEC

5443638 INSPEC Abstract Number: B9701-6210L-138, C9701-7410F-077

Conference Date: 5-8 March 1995 Conference Location: Phoenix, AZ, USA
Language: English
Subfile: C

Abstract: This paper addresses the development and implementation of a " **controller** " for a single manufacturing machine. This prototype will serve as an important tool to study the integration of several functions and the utilization of status data to evaluate scheduling and **control** decision alternatives. The emphasis is on creating a prediction capability to aid in assessing the...

... by using neural networks, simulation, and genetic algorithms. Neural networks predict the behavior of different **sequencing policies** available in the system. The contribution of the generic algorithms to the decision-making process is the development of a "new" scheduling **rule** based on a "building blocks" procedure initiated by the neural networks.

8/3,K/42 (Item 41 from file: 2)
DIALOG(R)File 2:INSPEC

5010857 INSPEC Abstract Number: C9509-1340E-011
Title: MRFACS with nonlinear consequents by fuzzy identification of system for time delay system
Author(s): Chin-Chih Hsu; Yamada, S.; Fujikawa, H.; Shida, K.
Author Affiliation: Dept. of Electr. & Electron. Eng., Musashi Inst. of Technol., Tokyo, Japan
Conference Title: Proceedings of 1995 IEEE International Conference on Fuzzy Systems. The International Joint Conference of the Fourth IEEE International Conference on Fuzzy Systems and The Second International Fuzzy Engineering Symposium (Cat. No.95CH35741) Part vol.1 p.283-8 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1995 Country of Publication: USA 5 vol. (xxxiv+2342+vii+106) pp.
ISBN: 0 7803 2461 7
U.S. Copyright Clearance Center Code: 0 7803 2461 7/94/$4.00
Conference Title: Proceedings of 1995 IEEE International Conference on Fuzzy Systems. The International Joint Conference of the Fourth IEEE International Conference on Fuzzy Systems and The Second International Fuzzy Engineering Symposium
Conference Sponsor: IEEE Neural Networks Council; Lab. Int. Fuzzy Eng. Res.; Japan Soc. Fuzzy Theory & Syst.; Japan Inf. Process. Dev. Center
Conference Date: 20-24 March 1995 Conference Location: Yokohama, Japan
Language: English
Subfile: C

Abstract: We proposed two types of fuzzy MRACS (MRFACS) for time delay system, one is fuzzy **controller** designed with traditional fuzzy logical **controller** and the other is fuzzy **controller** design with fuzzy identification concept. GAs are applied for optimizing the **rule** set of a fuzzy logic **control** (FLC) and the coefficients of fuzzy identification system (FIS). In **order** to accelerate the search, we modified genetic algorithms (GA) with a eugenics **policy** . The conclusions we got after simulations are : (1) Modified GA (MGA) can find **rule** set efficiently,

switch **controller** in transmitting packets. In a crossbar switch with input queueing, significant loss of throughput can occur when head-of-line service **order** is employed. A solution can be based on an algorithm which maximizes throughput. However since this solution is typically required in less than one microsecond, software implementation **policy** is infeasible. We will carry out an analysis of the benefits of such a **policy** , describe some existing proposed schemes for its implementation, and propose a further scheme that provides...

8/3,K/48 (Item 47 from file: 2)
DIALOG(R)File 2:INSPEC

4709857 INSPEC Abstract Number: C9408-7460-072
Title: Human-machine cooperation: toward an activity regulation assistance for different air traffic control levels
Author(s): Vanderhaegen, F.; Crevits, I.; Debernard, S.; Millot, P.
Author Affiliation: Valenciennes Univ., France
Journal: International Journal of Human-Computer Interaction vol.6, no.1 p.65-104
Publication Date: Jan.-March 1994 Country of Publication: USA
CODEN: IJHIEC ISSN: 1044-7318
Language: English
Subfile: C

Abstract: Our research is based on the air traffic **control** activity **regulation** assistance. It aims at integrating the two levels of the air traffic **control** organization: a tactical level managed by a so-called radar **controller** and a strategic one managed by a so-called organic **controller** . Concerning the tactical level, our research is directed toward a 'horizontal cooperation' that consists in a dynamic allocation of **control** tasks between a human air traffic **controller** and an assistance tool. The other level is oriented toward a scheduling module in **order** to improve the initial allocation **policy** .

8/3,K/49 (Item 48 from file: 2)
DIALOG(R)File 2:INSPEC

4695972 INSPEC Abstract Number: C9408-3360D-006
Title: Modelling and control of a transport system
Author(s): Spathopoulos, M.P.; de Ridder, M.A.
Author Affiliation: Div. of Dynamics & Control, Strathclyde Univ., Glasgow, UK
Part vol.1 p.48-53 vol.1
Publisher: IEE, London, UK
Publication Date: 1994 Country of Publication: UK 2 vol. xl+1594 pp.
ISBN: 0 85296 610 5
Conference Title: International Conference on CONTROL
Conference Date: 21-24 March 1994 Conference Location: Coventry, UK
Language: English
Subfile: C

Abstract: Presents the modelling and supervisory **control** design of a subway system. This transport system consists of several tracks connecting various stations...

... which include the logical branching and the assignment operators. The system is modelled in a **top down** way using an interactive graphical representation of both structure and behaviour based on systems decomposition, subsystem interaction and subsystem behaviour. The model is constructed using the system's **hierarchical** structure and the connections between inputs and outputs of its subsystems. Next the authors address the problem to develop **control** strategies in **order** to ensure desirable behaviour of the model. Instead of attempting to construct the complete **control policy** for the discrete event system, the authors propose a distributive **control** system where each component of the system is controlled by a "local" **controller** following ("dynamic") global specifications. Such a local **controller** can perform "dynamic" **control** in the sense that it disables and enables events depending on the ("dynamic") process behaviour...

8/3,K/50 (Item 49 from file: 2)
DIALOG(R)File 2:INSPEC

4687222 INSPEC Abstract Number: C9407-7160-028
Title: Integration of information and knowledge from the engineering activity to the workshop control
Author(s): Biennier, F.; Favrel, J.; Beslon, G.
p.840-5 vol.1
Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA
Publication Date: 1993 Country of Publication: USA 3 vol. (xviii+1051+xvi+848+xviii+1042) pp.
ISBN: 0 8186 3450 2
U.S. Copyright Clearance Center Code: 0 8186 3450 2/93/$3.00
Conference Title: Proceedings of 1993 IEEE International Conference on Robotics and Automation
Conference Sponsor: IEEE
Conference Date: 2-6 May 1993 Conference Location: Atlanta, GA, USA
Language: English
Subfile: C

...Abstract: of knowledge about the different components of the workshop and about the manufactured products. In **order** to provide flexibility and reactivity, the **control** system should integrate this information (including information from engineering activities) and also suit the workshop management **policy** . A model that organizes this knowledge dynamically according to contextual points of view is proposed. It relies on cooperative **controllers** . Each is based both on a specialized view of the knowledge base and a global...

8/3,K/51 (Item 50 from file: 2)
DIALOG(R)File 2:INSPEC

4685409 INSPEC Abstract Number: C9407-1290F-058
Title: Production planning and scheduling using a fuzzy decision system
Author(s): Custodio, L.M.M.; Sentieiro, J.J.S.; Bispo, C.F.G.
Author Affiliation: Inst. de Sistemas e Robotica, Inst. Superior Tecnico, Lisbon, Portugal
Journal: IEEE Transactions on Robotics and Automation vol.10, no.2

and turret subsystems. A detailed simulation of the proposed architecture including time- **ordered** planning and **priority** -based linear quadratic tracking provides the preliminary results on which the discussion is based.

8/3,K/60 (Item 59 from file: 2)
DIALOG(R)File 2:INSPEC

03897729 INSPEC Abstract Number: B91040627
Title: Optimal scheduling in some multi-queue single-server systems
Author(s): Liu, Z.; Nain, P.
Author Affiliation: INRIA-Sophia Antipolis, Valbonne, France
Conference Title: Proceedings IEEE INFOCOM '90. The Conference on Computer Communications. Ninth Annual Joint Conference of the IEEE Computer and Communication Societies. The Multiple Facets of Integration (Cat. No.90CH2826-5) p.1213-19 vol.3
Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA
Publication Date: 1990 Country of Publication: USA 3 vol. xxiv+1269 pp.
ISBN: 0 8186 2049 8
U.S. Copyright Clearance Center Code: CH2826-5/90/0000-1213$01.00
Conference Sponsor: IEEE
Conference Date: 3-7 June 1990 Conference Location: San Francisco, CA, USA
Language: English
Subfile: B

...Abstract: the queue upon the arrival of the server leave the system (variant II). A scheduling **policy** is a **rule** that selects the next queue to be visited by the server. When the **controller** has no information on the state of the system, it is shown, under homogeneous arrival assumptions, that a cyclic **policy** minimizes the expected number of customers in the system. When the **controller** knows the number of customers in each queue, it is shown that the so-called most-customers-first (MCF) **policy** minimizes, in the sense of strong stochastic **ordering** , the vector of the number of customers in each queue whose components are **arranged** in decreasing **order** . These results hold for variants I and II and are obtained under fairly weak statistical assumptions. This model has potential applications in videotex and time-division multiple- **access** systems.

8/3,K/61 (Item 60 from file: 2)
DIALOG(R)File 2:INSPEC

03844288 INSPEC Abstract Number: C91025446
Title: NETMAN: an integrated environment for hydraulic networks management
Author(s): Masmoudi, M.; Vansteenkiste, C.G.
Author Affiliation: Dept. of Appl. Math. & Biometry, State Univ. of Ghent, Belgium
Conference Title: Intelligent Process Control and Scheduling: Discrete Event Systems. Proceedings of the 1990 European Simulation Symposium p. 51-5
Editor(s): Vansteenkiste, G.C.; Kerckhoffs, E.J.H.; Muller, H.; Broeckx, F.
Publisher: SCS, San Diego, CA, USA

Publication Date: 1990 Country of Publication: USA x+249 pp.
ISBN: 0 911801 83 9
Conference Date: 8-10 Nov. 1990 Conference Location: Ghent, Belgium
Language: English
Subfile: C

...Abstract: the hydrologic events, results in the fact that there is actually no general algorithm to **control** such systems. An iterative **hierarchical** process is proposed to **control** releases through a three level decision **policy** . The decision from each layer is updated according to most recent collected information. An intelligent shell, which integrates qualitative and **rule** based knowledge, governs the overall **control** support and has the capability to select automatically the best operation algorithm. Multi-objective and multi-criteria techniques, as well as empirical operation **rules** , provide the set point of the local **controller** .

8/3,K/62 (Item 61 from file: 2)
DIALOG(R)File 2:INSPEC

03427455 INSPEC Abstract Number: C89047143
Title: Modeling of a neutralization reaction and self-adaptive control of pH
Author(s): Paszkiewicz, D.P.; Prevot, P.
Author Affiliation: Dept. d'Energetique, INSA Lyon, Villeurbanne, France

Conference Title: Identification and System Parameter Estimation 1988. Selected Papers from the Eighth IFAC/IFORS Symposium p.1171-6 vol.2
Editor(s): Chen Han-Fu
Publisher: Pergamon, Oxford, UK
Publication Date: 1989 Country of Publication: UK 2 vol. xxiv+1385 pp.
ISBN: 0 08 035739 3
Conference Sponsor: IFAC; IFORS
Conference Date: 27-31 Aug. 1988 Conference Location: Beijing, China
Language: English
Subfile: C

Abstract: Deals with different aspects of modeling of a neutralization reaction and **control** of pH in a chemical pilot plant. The issue of modeling is significant for the design of **controllers** . The influence of different factors on the neutralization process is analyzed and compared with the...

...Finally, the authors propose a reduced, nonlinear dynamical model of the reactor. The design of **control** law is based on the decoupling and pole placement theories. Then a quadratic optimization **control** law with reference model is proposed for the resulting linear subsystems. However, estimation in real time of one parameter is necessary to assure the efficient noninteracting **control** . In **order** to make the optimal **control** law more robust a self-adaptive **policy** with fuzzy set theory is designed in such a way that the parameters of the...

... the process. A series of experiments is described. They show the efficiency of the decoupling **control** law based on parameter estimation and demonstrate the robustness of the fuzzy self-adaptive **controller** .

whole system. The scheme is especially easy to realize for systems controlled by a **sequence** of steps (point to point) similar to the common **policy** in many robot servo systems. A simulation example of a simple third- **order** SISO (single-input, single-output) system controlled by the proposed adaptive scheme is presented. The...

...identification of the coefficient plane parameters b and c of the entire system. The adaptive **control** law is then uniquely computed.

8/3,K/65 (Item 64 from file: 2)
DIALOG(R)File 2:INSPEC

03164912 INSPEC Abstract Number: C88038979
Title: Participative selection of a distributed control system
Author(s): MacDonald, D.R.; Matterson, B.D.; Cook, G.A.; Isner, A.B.
Author Affiliation: MacMillan Bloedel Ltd., Powell River, BC, Canada
Journal: Pulp & Paper Canada vol.88, no.10 p.91-3
Publication Date: Oct. 1987 Country of Publication: Canada
CODEN: PPCADD ISSN: 0316-4004
Language: English
Subfile: C

Abstract: A large integrated pulp and paper mill had extensive experience with both programmable logic **controllers** and distributed **control** systems, but in view of technological advances it was felt that a re-examination of the market was in **order** . The aim of the selection was to develop a long-term relationship with a single supplier to reduce the cost of **controls** for the whole mill and allow for future growth and change. This paper outlines the use of a team approach in line with a quality improvement **policy** .

8/3,K/66 (Item 65 from file: 2)
DIALOG(R)File 2:INSPEC

03111734 INSPEC Abstract Number: B88030305, C88022624
Title: Hierarchical optimal controller for multimachine power system
Author(s): Madhava Rao, K.; Rama Murthi, M.
Author Affiliation: Regional Eng. Coll., Warangal, India
Journal: Journal of the Institution of Engineers (India) Electrical Engineering Division vol.67, pt.EL5 p.206-10
Publication Date: April 1987 Country of Publication: India
CODEN: JEELAC ISSN: 0020-3386
Language: English
Subfile: B C

Abstract: The authors present a new closed loop optimal **controller** for a multimachine system designed with a two-level **controller** for both off-line and on-line implementations. The performance of such a **controller** is compared with the conventional global optimal **controller** . Operational convenience, easy implementation of **control** **policies** through microprocessors, saving in computational time and memory requirements are the definite advantages of this newly designed **hierarchical** **controller** . Increased reliability from such a **controller** is also expected.

control of more complex systems, a **hierarchical** **controller** is proposed that decomposes the **control** problem into interdependent subproblems. Practical experiments on a class of set-point regulator problems illustrate...

8/3,K/87 **(Item 2 from file: 35)**
DIALOG(R)File 35:Dissertation Abs Online

01696149 ORDER NO: AAD99-24212
HIERARCHICAL PRODUCTION OPTIMIZATION AND INVENTORY CONTROL OF SEMICONDUCTOR REENTRANT MANUFACTURING LINES (WAFER FABRICATION, MODEL PREDICTIVE CONTROL)
Author: VARGAS VILLAMIL, FELIPE DE JESUS
Degree: PH.D.
Year: 1999
Corporate Source/Institution: ARIZONA STATE UNIVERSITY (0010)
Source: VOLUME 60/03-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 1247. 169 PAGES

...optimization of reentrant manufacturing lines.
The <math> <f> ℓ</f> </math>1-norm Adaptive Predictive **Controller** /Optimizer developed in this work is implemented in a **hierarchical** structure where the **control** actions are split in three-layers which act at different time scales, namely, adaptive, optimization, and direct **control** layers. At the top layer the parameters of a semiempirical aggregated model are obtained on-line. At the intermediate layer a modified <math> <f> ℓ</f> </math>1-norm Predictive **Controller** /Optimizer uses the identified model to optimize the performance of the manufacturing line. The objective...
...production rate and keep constant work-in-process levels. The receding horizon characteristic of this **controller** allows the optimization and the **control** problems to be simultaneously solved at each sampling time. At the bottom level a variable **priority** scheduling **policy** is used to deal with the local decisions. Its function is to follow the targets issued by the optimizer. This **controller** is applied to the discrete event simulator of a one-product 6-step, 5-machine...

...rates, batching, setup, and preventive maintenance. Cumulative coherence analysis is performed to this simulator (direct **control** layer). It shows that the aggregated dynamics of this reentrant line are weakly nonlinear at ...

8/3,K/88 **(Item 3 from file: 35)**
DIALOG(R)File 35:Dissertation Abs Online

01681426 ORDER NO: AAD99-14126
NONLINEAR NEURAL CONTROL WITH POWER SYSTEMS APPLICATIONS (NEURAL NETWORKS, ELECTRIC POWER)
Author: CHEN, DINGGUO
Degree: PH.D.
Year: 1998
Corporate Source/Institution: OREGON STATE UNIVERSITY (0172)
Source: VOLUME 59/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 6418. 275 PAGES

...are also provided.

The transient stability problem is studied with consideration of load effects. The **hierarchical** neural **control** scheme is developed. Trajectory-following **policy** is used so that the **hierarchical** neural **controller** performs as almost well for non-nominal cases as they do for the nominal cases. The adaptive **hierarchical** neural **control** scheme is also proposed to deal with the time-varying nature of loads. Further, adaptive neural **control** , which is based on the on-line updating of the weights and biases of the...

...Simulations provided on the faulted power systems with unknown loads suggest that the proposed adaptive **hierarchical** neural **control** schemes should be useful for practical power applications.

8/3,K/89 (Item 4 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01658138 ORDER NO: AAD98-40627
DYNAMIC TRAFFIC CONTROL: DECENTRALIZED AND COORDINATED METHODS (ALLONS, INTELLIGENT TRANSPORTATION)
Author: PORCHE, ISAAC RENE, III
Degree: PH.D.
Year: 1998
Corporate Source/Institution: THE UNIVERSITY OF MICHIGAN (0127)
Source: VOLUME 59/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 3667. 141 PAGES

...Signals" (ALLONS-D).

Two perspectives are addressed as part of the second component: (i) a **hierarchical** **control** architecture for enabling local **controllers** to maximize system performance and (ii) an iterative process (ALLONS-I) to determine an equilibrium set of **control** **policies** for traffic-responsive signal **controllers** like ALLONS-D. The first perspective divides local signal choice and coordination of these local **controllers** into two layers of **control** . An optimization problem is formulated to determine the coordination requirements that are imparted to the local **controllers** from the higher layer. The ability of this scheme to improve performance on arterial and grid networks is tested via software simulation. In the same manner, this **hierarchical** scheme is shown to be useful in improving the flow of transit vehicles in a traffic signal network relying on ALLONS-D **controllers** . The second perspective for the second component of this dissertation deals with a form of coordination achieved by iteratively recalculating the signal **control** **policies** at the intersections; this iterative method is a dynamic adjustment process. This process is successful...

8/3,K/90 (Item 5 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01651179 ORDER NO: AAD98-36702
ROBUST WIDE-RANGE CONTROL OF POWER PLANTS FOR LIFE EXTENSION AND PERFORMANCE ENHANCEMENT (FUZZY LOGIC, FEEDFORWARD POLICY)
Author: KALLAPPA, PATTADA
Degree: PH.D.

Year: 1998
Corporate Source/Institution: THE PENNSYLVANIA STATE UNIVERSITY (0176)
Source: VOLUME 59/06-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 3008. 137 PAGES

This dissertation presents a complete methodology for life extending **control** system (LECS) synthesis for fossil fuel steam power plants with the objectives of performance enhancement, structural durability and life extension. The proposed LECS has a two- **tier** architecture. The lower **tier** consists of a feedforward **control** **policy** and a family of linear multivariable robust **controllers** which are gain-scheduled. The optimal feedforward **policy** is formulated on the principle of nonlinear programming. The sampled-data feedback **control** laws are synthesized based on an induced L$\sb2$-norm technique which minimizes the worst...

...the energy of the exogenous inputs and the energy of the regulated outputs. The supervisory **controller** at the upper level makes decisions based on trade-off between performance enhancement and life-extension. The supervisory **controller** is synthesized based on approximate reasoning embedded with **rule** based expert knowledge of the power plant and structural damage models. Using the fuzzy logic...

...off between plant performance and structural damage in critical components. The fuzzy algorithm facilitates bumpless **controller** switching for gain scheduling, under wide range operation and **control** .
The LECS has been tested by simulation experiments on a generic fossil fuel power plant...

8/3,K/91 (Item 6 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01631536 ORDER NO: AAD98-23196
MODELING OF AIRPORT OPERATIONS USING AN OBJECT-ORIENTED APPROACH (AIR TRAFFIC CONTROL)
Author: ZHONG, CAOYUAN
Degree: PH.D.
Year: 1997
Corporate Source/Institution: VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (0247)
Source: VOLUME 59/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 779. 145 PAGES

...using the multi-threading techniques, components are integrated into the proposed modeling framework. Unlike traditional **sequential** simulation model, this framework organizes simulation activities into four major groups which are: flight schedule, aircraft movement, time, and animation. Instead of using built-in **control** logic, the framework adapts an open system **policy** which gives the flexibility to the end users to incorporate the user-preferred **control** logic into the end models. Another purpose in this research is to provide a future mechanism to study airfield ground traffic automated **control** systems with Just-In-Time forecasting and model system performance in a real-time ATC...
...can query real time information and provide real time advice to pilots and air traffic **controllers** . This study is one of a few current research projects that are of using multiple...

8/3,K/92 (Item 7 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01603175 ORDER NO: AAD98-03504
LONGITUDINAL CONTROL OF AUTOMATED COMMERCIAL HEAVY VEHICLES (INTELLIGENT TRANSPORTATION SYSTEMS, STRING STABILITY, SPACING)
Author: YANAKIEV, DIANA PETKOVA
Degree: PH.D.
Year: 1997
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, LOS ANGELES (0031)
Source: VOLUME 58/08-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 4383. 108 PAGES

...headways due to their low actuation-to-weight ratio.
We develop two new nonlinear spacing **policies** , variable time headway and variable separation error gain, which all but eliminate this undesirable side effect. The first **policy** significantly reduces the transient errors and allows us to use much smaller spacings in autonomous platoon operation, while the second one results in smoother and more robust longitudinal **control** . Furthermore, the two can be combined to yield even better robustness with respect to maneuvers. In **order** to achieve robustness with respect to significant actuator delays (present in existing CHVs) as well, we design a new **controller** using the backstepping methodology. A predictor is also added to the **control** loop for **control** smoothness enhancement.

8/3,K/93 (Item 8 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01536094 ORDER NO: AAD97-09808
ADAPTIVE HIERARCHY OF DISTRIBUTED FUZZY CONTROL: APPLICATION TO BEHAVIOR CONTROL OF ROVERS
Author: TUNSTEL, EDWARD W., JR.
Degree: PH.D.
Year: 1996
Corporate Source/Institution: THE UNIVERSITY OF NEW MEXICO (0142)
Source: VOLUME 57/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE 6475. 134 PAGES

This dissertation addresses the synthesis of knowledge-based **controllers** for complex autonomous systems that interact with the real world. A fuzzy logic **rule** -based architecture is developed for intelligent **control** of dynamic systems possessing a significant degree of autonomy. It represents a novel approach to **controller** synthesis which incorporates fuzzy **control** theory into the framework of behavior-based **control** . The **controller** intelligence is distributed amongst a number of individual fuzzy logic **controllers** and systems **arranged** in a **hierarchical** structure such that system behavior at any given level is a function of behavior at the level(s) below. This structure addresses the combinatorial problem associated with large **rule** -base cardinality, as the totality of **rules** in the system are not processed during any **control** cycle. A method of computationally evolving fuzzy **rule** -bases is also introduced. It is based on the genetic programming paradigm of evolutionary computation and